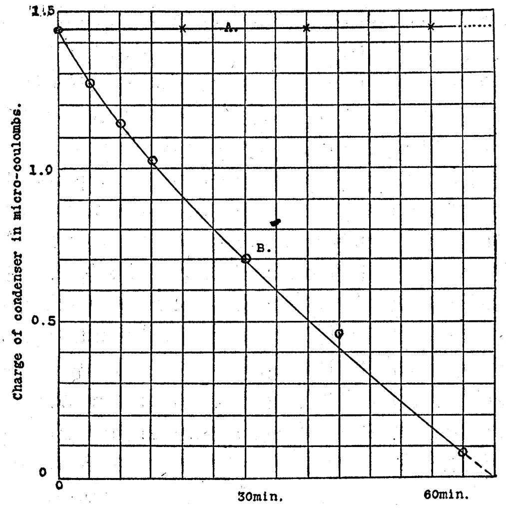
'Inferences from Maxwell's theory concerning the motion of pure ether' (Wissenschaftliche Abhandl. B. III., p. 526, Wiedem. Am. Vol. LIII., p. 135–143).

M. I. Pupin.

Columbia University, April 2, 1896.

A METHOD OF DETERMINING THE RELATIVE TRANSPARENCY OF SUBSTANCES TO THE RÖNTGEN RAYS.

The fact that the Röntgen rays have the power of dissipating the charge of a perfectly insulated electrified body was established by Professor J. J. Thompson,* and furnishes us one of the simplest methods of detecting the rays. This effect is the basis of a very simple method of making quantitative measurements of the intensity of the radiation. If we take a condenser and allow the Röntgen rays to fall upon it, we shall find that there is a very considerable diminution in its insulation resistance, and that the charge of the condenser is gradually dissipated. This is illustrated by the



Time between charging and discharging condenser.

curves A and B in the accompanying figure. A was obtained under the ordinary conditions. B was obtained when the Crookes tube was in action, and placed about six inches from the wooden side of condenser. The curve A was determined before, and again immediately after the determination of B. The two determinations of A were identical, showing that the effect of the Röntgen ray on the insulation disappeared with the cessation of the ray. In making these measurements a Nalder micro-farad condenser was used, the condenser being charged with a standard Clark cell. It is evident, therefore, that it is possible to compare the transparency of different substances by allowing the rays to pass through screens made of the substances and placed between a Crookes tube and the condenser and measuring the resulting leakage of the condenser.

*London Electrician, February 7, 1896.

I am now engaged in making a series of measurements, using this method and a condenser especially constructed for the purpose, and hope to give the results in a subsequent number.

It would seem that the method is capable of giving results much more quantitative in character than any that can be obtained by photographic methods.

Wm. Lispenard Robb.

Trinity College, March 25, 1896.

AN APPARATUS FOR THE STUDY OF SOUND INTENSITIES.

The study of sound intensities presents many difficulties to the physicist as well as to the psychologist; the determination of the equality of loudness of two sounds, as well as of the law of relation between the physical cause and the sensational result is perhaps the most serious one. The facts that sounds must be estimated successively and should be of a constant intensity from beginning to end further complicate the problem. The method of the falling ball has been most frequently used; it consists in dropping a ball successively from two different heights and recording the minimum difference in height necessary to